

VII.—An Account of the Various Expeditions to Mt. Kinabalu.—By J. C. MOULTON, Curator of the Sarawak Museum.

HAVING recently made an expedition to this great mountain in British North Borneo, I became interested in the literature on the subject, and with a view to being of some assistance to future travellers to the mountain I have compiled the following notes, the results of my researches. As far as I can ascertain, I have mentioned every European who has reached the higher altitudes and summit. No doubt there have been several visitors to the lower slopes who had no intention of climbing higher, or who, from some reason or other, were prevented from doing so. The earliest of these abortive expeditions was that of Thomas Lobb, a plant collector, who reached Kiau* in 1856, the Dusun village on a spur of Kinabalu (alt. 2800 ft.); he was prevented from going further by the natives of Kiau.

A weekly steamer runs from Singapore to Labuan (three days), and thence a few hours on to British North Borneo, calling at Jesselton, the principal town on the west coast, where the traveller has to disembark for Kinabalu.

Three routes are available from the coast to Kiau, which is the necessary starting-place for the actual ascent.

The Northern or Tampassuk Route.—For this the traveller takes the local steamer from Jesselton to Usukan Bay, a matter of three hours. A carefully graded bridle-path runs from here right up to Kiau, about forty miles. Having previously arranged matters with the Government officer in charge of this district, the traveller should find a pony at Usukan and several buffaloes in charge of Badjaus for his baggage. The first stage is a two hours' ride to Kotabelud, the Government station. The next, five hours to Kabaïou, where there is a small rest-house on the left

* Variouslly spelt *Kiou*, *Kiow*, *Kiau*; the last syllable is pronounced "ow" as in *cow*, the first as "e" in *be*.

bank of the Tampassuk. The next to Koung, five hours, where there is another little rest-house. Here one has to cross the Tampassuk (or Kadamaian, as it is called here), and begin the ascent to Kiau. Unless the path is in good condition, this has to be walked; in three hours one should reach Kiau.

The Western or Tuaran Route.—One may ride the twenty odd miles from Jesselton to the Government station of Tuaran, or make a more interesting and varied day's journey of it by taking boat for two or three hours to Gantisan; disembark there, cross a narrow ridge of land, and take a fresh boat the other side for two hours to Mengkabong, a pretty Badjau village built over the water. Thence to Tuaran is an hour's walk. From here to Kiau is four days' walk; Dusuns have to be taken from Tuaran to carry baggage. The path is hilly, and, like most native paths, in a varying state of repair. The first stage is to Kappak, about five hours, the second day to Kalawat rather less; then a long day of seven hours to Koung, being careful to avoid the village of Bungol, which lies in a hollow on the right. Most travellers have spent the third night there, thus wasting the next day over a short journey to Koung. At Koung one joins the same path up to Kiau as by the Tampassuk route.

The Southern or Interior Route.—I have not been this way, but I understand one may take the train from Jesselton to Tenom, the station of the Resident of the Interior, and thence ride by bridle-path, six days, over the Tambunan Pass and down to Koung, and thence up to Kiau as by the other routes.

An examination of the accompanying map will make these routes clear.

From Kiau to the summit is three days' journey. The first stage is to a large overhanging rock known as Lobong (alt. 4700 ft.) To get to it, one may either descend from Kiau to the Kadamaian and follow that stream up and through the Minitindok gorge, or keep along the hillside from Kiau and strike the Kadamaian above the Minitindok gorge. Four or five hours are required for this journey, and if the river is at all high the route through the gorge is impossible. The second stage is a steep climb of six or seven hours to the Pakka cave (alt. 10,500 ft.), passing another camping ground (Kamborangah) at 7300 ft. From Pakka to the summit (13,455 ft.) is three hours up and three down.

I am indebted to the Librarian of the Royal Geographical Society, London, for references to some of the articles discussed in the following pages; to Capt. F. C. Learmonth, R.N., for his courteous permission to use his maps of the Kinabalu district; to Miss Gibbs and Dr. Pilz for sending me copies of their papers; and to Mr. P. C. M. Veitch for giving me some interesting information about his journey to Kinabalu in 1877 with the late Mr. Burbidge.

I.—SUMMARY OF ACCOUNTS OF VISITS TO KINABALU.

[1844. *Narrative of the Voyage of H.M.S. 'Samarang.'* 1848. By Capt. Sir Edward Belcher, R.N., C.B., F.R.A.S., F.G.S., &c. Vol. i. p. 190, he writes: "Our observations from several positions afford the mean height of its peak to be 13,698 ft." These observations were made in November, 1844.]

1851. *Journal of the Indian Archipelago and Eastern Asia.* 1852. Vol. vi. pp. 1-17.—"Notes of an ascent of the mountain Kina-Balow." This is Sir Hugh Low's account of his first expedition.

He left Labuan February 21st, 1851, reached Kimanis on the 24th, and the mouth of the Tuaran on the 26th. He followed the Tuaran route to Koung, stopping at Bawang, Kalawat, and Bungol on the way. He reached Koung on the morning of March 6th and Kiau that afternoon. His notes on the size of these villages are of interest for comparison with the greatly reduced numbers living in these same places to-day. Of Kalawat he says: "A collection of about forty houses"; Bungol, "about one hundred and twenty houses"; Koung, "the village is very large, containing certainly not less than two hundred and fifty to three hundred houses"; and of Kiau he writes: "The tribe of Kiow is said to be of comparatively great numerical strength, numbering upwards of 2000 fighting men." At Kalawat there are now (October, 1913) five or six houses only; at Koung about twenty; at Kiau a little over a hundred adult men.

The next day, March 7th, he left Kiau, descending the hillside to the Kadamaian and following the course of that river upwards through paddi farms, where he stayed the night. Next day he reached an overhanging rock, and the day after he writes: "At length, after 5 p.m., having descended a hundred feet into a ravine, I found myself upon the edge of a little torrent, and opposite to an over-

hanging rock of syenite, similar to that I had left in the morning, but less large. This was the highest point the Dyaks (*sic*) had ever reached; all beyond was perfectly unknown." He notes the thermometer at fifty-two degrees. There seems to be no doubt that this overhanging rock is what is known by later writers as the Pakka camp. The interesting point is that Low must have followed the *right* bank of the Kadamaian in order to arrive "on the edge of a little torrent (the Kadamaian) and opposite," whereas the path followed by others keeps along the *left* bank, and then, making a round to the west, rejoins the Kadamaian at Pakka still on the left bank. Whitehead mentions a path opposite the Pakka cave, which the natives told him led to Kiau. Low probably followed this.

Low reached Pakka on March 9th, and on the 11th, at 8 a.m., set out for the summit, of which he writes: "The remainder of our ascent was very toilsome, though apparently not so steep as much we had passed. It was over the 'herbless granite' which was scaling off in large masses and inclined at a considerable angle, probably about forty degrees. Shoes here were of no avail—I was forced to throw them off, and then the rough rain-worn surface of the syenitic granite was more easily passed. . . . Finally, after innumerable rests, we reached the base of one of the jagged peaks of the hill. . . . Instead of something like a tableland, which I had expected to find, on the summit of this part of the mountain was a sharp ridge not six inches broad. On placing my breast against it and looking over the ridge, I gazed into a circular amphitheatre about eighty yards broad, the bottom of which, from its great depth and my position overhanging it, was indiscernible, though I imagine I could see down two thousand feet. All its sides were overhanging precipices, except that opposite to my position, where I could see the sea-line of clouds through a rent or opening in the rocks looking northwards. I found the jagged summits of the hill to consist of thin fragments of syenitic granite, with sharp water-worn edges and of most fantastic shapes. My position was between the bases of two of them; they were about one hundred and fifty feet above my head. I could not remain long admiring the majestic scene around me, for the frightfully dangerous position we had passed in the ascent made me quite alive to the rapid lifting of the clouds from the valleys, which I knew would conceal everything from our view, and caused me, immediately after having finished a

bottle of excellent Madeira to Her Majesty's health and that of my far-distant friends, and deposited the bottle upside down with a paper in it in a conspicuous place, to read off the barometer and hastily begin my descent. . . . One of my men, despising the caution with which I avoided all the little runs of water and selected the best drained places, attempted to make a short cut by following the course of one of these. His life had well-nigh paid the penalty of his rashness. His feet slipped from under him and away he went at railway speed down the inclined plain; fortunately for him, he was wearing a long Sooloo kris in his girdle in a wooden sheath; this dragging along the rocks was caught in a crevice and saved its owner from destruction. He had slid about thirty yards; thirty more had shot him over a precipice. The roughness of the rock had made sad havoc of his flesh, but he fortunately escaped serious injury."

Low descended on March 12th to the paddy farms, "to the almost total deprivation of the use of my knee for a month afterwards."

As to altitudes, he made Pakka camp 8368 ft., the summit 8615 ft. Of this last record he writes: "But it is not trustworthy, as the mercury, which for ten minutes remained stationary at the same height as at the lower station, was still rapidly falling." The highest point reached he made "eleven or twelve hundred feet higher than the cave, or about 9500 ft.;" and then noted: "this, I think, is an underestimate, as the first part of the ascent was very steep, and the whole of it sufficiently so to be exceedingly fatiguing, and four and a half hours were occupied in overcoming it." He continues: "From what I saw, I feel certain the highest summit, wherever it is, which has been made by triangulation between 13,000 ft. and 14,000 ft., is inaccessible to any but winged animals. I conceived that I had reached the true summit of the mountain, and certainly no point within sight was more than 500 ft. or 600 ft. above me. I imagine that the measurement by triangulation considerably exceeds the true height."

A small collection of plants was obtained, and the more remarkable new species were described by Sir Joseph Hooker in *Icones Plantarum*, vol. ix. (1852).

Sir Hugh Low came out to Sarawak in 1845 as a naturalist. In 1848 he became Colonial Secretary of Labuan, where he remained till 1877, when he was

appointed Resident of Perak. He retired in 1884, and died April 18th, 1895.

1858. *Life in the Forests of the Far East*. 1863. By Spenser St. John, F.R.G.S., F.E.S. [Vol. i. Chaps. viii.—x. are devoted to the author's two expeditions to Kinabalu.]

In St. John's first expedition, accompanied by Sir (then Mr.) Hugh Low, he left Labuan on April 15th, 1858, reached Abai on the coast of North Borneo on the 17th, and proceeded up the short river of that name. They then joined the Tampassuk, and after two or three days arranging for guides and coolies, followed that river up to Koung, where they arrived on April 25th. Next day, on setting out for Kiau, they had to pass through the village of Labang, where the inhabitants gave them a hostile reception; however, the two Europeans showed themselves determined to pass and stand no nonsense, which they did without coming to blows. St. John notes that "the Kiaus are much dirtier than any tribes I have seen in the neighbourhood; the children and women are unwashed, and most of them are troubled with colds, rendering them in every sense unpleasant neighbours."

On the 28th they set out for the mountain, putting up for the night in one of the bamboo huts at the end of the paddi farms. Next morning St. John had to proceed alone, as his companion was unable to walk, having suffered much from walking with bare feet, to which he was unaccustomed. In two days he reached the Pakka cave, and the next day, May 1st, he climbed to the summit. He found the spot where Low had left the bottle in 1851,* and named the place Low's Gully; he then made his way further west to explore one of the higher peaks, afterwards known as St. John's Peak. He spent that night and the next at Pakka, and descended on the 3rd, finding Low still encamped on the paddi farm. After some trouble with the natives, who seemed keen not to let any goods leave their village, they got away from Kiau on the 6th, reached Abai (Low doing most of the journey on a raft down the Tampassuk) on the 8th, and Labuan five days later.

This was the first trial of the Tampassuk or northern route. In their next expedition they followed the Tuaran route, as Low had done originally in 1851.

They left Labuan early in July, and proceeding *via*

* Presumably still there, though there appears to be no other mention of it in the accounts of subsequent travellers. I was unable to find it in 1913.

Gantisan and Mengkabong, where they attended a fair (*tamu*), they reached the Tuaran and spent the night in the chief's house at Tamparuli. Mention of the fair at which both Badjaus and Dusuns met to trade is of interest, as the much talked-of hostility between these two tribes could not have been very remarkable even in those days before the arrival of British influence. St. John frequently comments on the "state of war" then existing between Kiau and the neighbouring villages—a condition of things which allowed small parties of women and children to wander far out to their farms unprotected and apparently unmolested.

The chief of Tamparuli is worth a passing note as the possessor of a daughter, "the loveliest girl in Borneo," of whom St. John further writes: "I have never seen a native surpass her in figure or equal her gentle, expressive countenance." From here they made six stages of it to Koung, sleeping at Bawang, Sinilu, Kalawat, Bungol, below Koung on the Tampassuk, and reaching Koung on the sixth day. At Sinilu (= Si Nilau) he notes the women wearing a black cloth over their breasts—a custom which still prevails among the Dusun women at Kiau and neighbouring villages. I can find no mention of the same custom among other Bornean tribes. The cloth is kept in place by rotan rings—red as used by the ladies of Kiau, white by those of Tuaran. The cloth is worn until the wearer becomes a mother.

The village of Kalawat (or Klowat) is noted as "a cluster of about ten long houses, containing upwards of eighty families." At Bungol there appeared to be above one hundred and sixty families.

On arriving at Kiau they made an excursion to the Marei Parei spur, and there discovered giant pitcher-plants even finer than those found by Low on his first ascent in 1851. They returned to Kiau, fetched their belongings, and spent another day or two at Marei Parei collecting plants. St. John remarks on the possibilities of the place thus: ". . . we were convinced that if ever the north of Borneo fall into the hands of a European Power, no spot could be better suited for barracks than Marei Parei. The climate is delightful; at sunrise the average was fifty-six degrees, mid-day seventy-five degrees, sunset sixty-three degrees, and this temperature would keep European soldiers in good health. There is water at hand, and up the western spur a road could be easily made suited to cattle and horses."

On their return to Kiau they set out for the summit,

and following the same path as before spent the first night at an elevation of 4400 ft., the next on a marshy spot—probably Kamborangah—and the third night reached Pakka, which he notes as more than 9000 ft. above the sea-level. They climbed to the summit, and St. John tried to climb the north-western peak, but failed to reach the top of it. The highest of them all, now known as Low's Peak, appears to have escaped his notice. According to the "Merlin" party, it is just five feet higher than any other; and so the fact of its being the highest is not obvious from the great plateau below. It is not so striking as Victoria Peak or St. John's Peak, as the plateau slopes easily up to within a few feet of the top.

The two travellers were overtaken by a heavy squall of hail and wind, the thermometer falling to forty-three degrees at 2 p.m., and their descent to Pakka Cave was fraught with considerable danger. An accident to the barometer and boiling-point thermometers prevented their taking the height of the summit plateau. The descent to Kiau occupied two days.

Mr. Low had made a large collection of plants which they wanted to get to the coast as quickly as possible. They accordingly settled up at Kiau, leaving the village on the friendliest terms, passed the night at Koung, and continued next day, *via* Bungol, straight through to Kalawat—a very long day's journey. The following day they passed Sinilu and reached Bawang, where cholera was rampant. The next day they reached Gantisan, and St. John remarks that Signor Cuarteron, the Spanish missionary, came to visit them. Bad weather prevented their sailing across to Labuan for several days.

The plants were described by Sir Joseph Hooker in the *Transactions of the Linnean Society*, 1860.

1873. *Bolletino della Società Geogr. Italiana*. 1874. "Un esplorazione in Borneo." By F. Giordano.

Cosmos di Guido Cora. 1875-6. Vol. iii. "Note di un viaggio a Borneo." By Giacomo Bove.

Posewitz* states that these two travellers visited the north coast of Borneo in the Italian warship 'Governolo' in 1873. Their route seems to have been from Gantisan to Tuaran, and thence through Sinilau, Kalawat, Bungol, and Koung. I have not seen these accounts, but Posewitz

* *Borneo: its Geological and Mineral Resources*. By T. Posewitz. Pp. 62-3. 1892.

writes that after the first day's march from Koung 1800 metres had been ascended (2700 metres according to Giordano). "Here, on account of bad weather, they were obliged to turn back, and reached the coast by the same way as they had come."

Burbidge probably refers to these two travellers when he writes: "Some years later—I believe in 1866—an Italian expedition came here for natural history purposes, and the Dusun account is that they ascended 6000 ft. This expedition, according to native accounts, paid twice as much as was necessary—a precedent which gives these hill villagers an excuse for extortion." (*Gardens of the Sun*, p. 269.)

1877. *Gardens of the Sun ; or a Naturalist's Journal on the Mountains and in the Forests and Swamps of Borneo and the Sulu Archipelago*. 1880. By F. W. Burbidge. [Chapters v., xiii., and xiv. are devoted to an account of Mr. Burbidge's two expeditions to the mountain.]

Accompanied by Mr. P. C. M. Veitch, two bird-hunters (in the employ of Mr. W. H. Treacher), and twenty-six men, Burbidge left Labuan on November 29th, 1877; their small steamer landed them at Gantisan next day. After the usual trouble of obtaining coolies they reached Mengkabong the following day, and the village of Tamparuli, on the Tuaran river, the day after. From here they pushed on to Bawang, where they slept the night. The following day they set out for Sinilu, but missed the way, and ended up in a Dusun house on the site of some lately deserted village. The next day they reached Kalawat, and after a rest proceeded on to Bungol, where they slept the night. The journey from here to Kiau, *via* Koung, was accomplished on the following day. Burbidge notes that they "met a large party of natives laden with baskets of tobacco and a little beeswax going on a trading expedition. There were some women among them, who, of course, carried the heaviest loads. . . . They showed no surprise at seeing us, and passed on apparently unconcerned as to our object." I quote this passage as it describes exactly a little party of Dusuns I met on my expedition thirty-six years after Burbidge.

After a day at Kiau they commenced the ascent, accompanied by eight Dusuns of Kiau and sixteen of their own followers. Rain prevented them making a long journey, and they slept beneath a large overhanging rock (possibly

Lobong, or a large rock between Minitindok and the mouth of the Kalupis). Next day they started at seven, noted the first *Nepenthes lowi* at about 5000 ft., further up *Nepenthes rajah*, and “*N. edwardsiana* was seen in two places. . . . Highest of all in the great *Nepenthes* zone came *N. villosa*, a beautiful plant, having rounded pitchers of the softest pink colour, with a crimson frilled orifice similar to that of *N. edwardsiana*. . . . To see these plants in all their health and vigour was a sensation I shall never forget—one of those which we experience but rarely in a whole lifetime !”

They reached the cave, noted as 9000 ft., about 3 o'clock, and Burbidge then goes on to say: “The next difficulty was to obtain water, since the men we had sent to search for it returned empty-handed, having failed to find any.” There is rather a mystery about this cave, as the ordinary route leads through Kamborangah (7200 ft.), where there is no cave, to Pakka (about 10,000 ft.), where the cave, or overhanging rock, is on the edge of a rushing torrent. Burbidge states that his guides “slept under a rock a little further on* and higher up the mountain side, and they found a stream from which good water was procured.”

They did not ascend beyond the top of the great ridge which leads to the foot of the granite cap, and after two nights in their cave descended to Kiau. The botanical pursuits of the two Europeans proved too much for the Dusuns' patience, so the Dusuns went on ahead; and the two botanists, left to themselves, lost the path and spent the night in the jungle. They reached Kiau safely next day, and after a two-days' excursion to Marei Parei, where they noted *Nepenthes edwardsiana* and *N. rajah* (the latter in abundance), they left Kiau for the coast. Following the same route they reached Gaya in six days and Labuan two days after. Burbidge writes that “after reaching Labuan both Mr. Veitch and myself had bad attacks of intermittent fever, the result of chilling exposure in wet clothes and ill-cooked food, accompanied by more than ordinary exertions.”

1878. Burbidge made a second expedition to Kinabalu in August, 1878. Accompanied by a man called Smith, lent by the manager of the Labuan coal mine, he left Labuan on July 31st, and after sundry mishaps with the

* In his second expedition described as a quarter of a mile further on.

small sailing boat reached the Tampassuk river on August 5th, and pulled five hours up to the house of a Mr. Pretyman. From here buffaloes were used to transport them the seven days' journey to Kiau; *en route* they passed through the villages of Ghinambor, Buramhangan, Sine-roup, Kambatuan, and Koung. The bad path and heavy fresh in the river delayed them.

Burbidge notes that Lemoung, the head-man of Kiau, had died since his last visit, and that his son Boloung had taken his place. Lemoung was one of St. John's guides twenty years before. His son and Kurou—another guide—escorted Burbidge on this trip. As before, two days were spent in the ascent, and apparently the same cave was used again at 9000 ft. On their arrival "one Dusun fetched us some water from a stream half a mile off." He also notes that they "had a view of the great waterfall on the bare granite rocks of the mountain opposite"; and that on leaving the place he carved his initials on the soft red sandstone wall of their cave.

Miss Gibbs states that "in the centre of the sheltered small forest above and below Pakapaka were huge red sandstone blocks," and she suggests that it was here Burbidge camped.

At 8000 ft. he writes: "Casuarina trees are commonly met with." Miss Gibbs, in comment, notes "the melancholy-looking *Lycopodium casuarinoides*—the only approach to anything like a *Casuarina* seen anywhere, though previous writers all record this unmistakable genus both here and on the Maraiparai."

They spent three days collecting plants round their camp, ascending only to 10,700 ft., as the summit was not the object of their expedition.

Of the four big Nepenthes, Burbidge remarks that *N. rajah* and *N. villosa* frequent open mossy patches, but that *N. lowi* and *N. edwardsiana* appear never to reach so high an altitude as the former two.

On August 18th they commenced the descent. Collecting as they went, they reached Kiau at 4 p.m.

The journey from Pakka or neighbourhood to Kiau is a good day's walk for a native unencumbered; but I should imagine quite impossible for a European to accomplish if he spent much time collecting on the way, besides loading himself with plants so that he had "both arms full besides the basket on his back," as Burbidge describes his arrival at Kiau. It seems more probable that they followed a

shorter route up the more northern spur which forms the right bank of the Kadamaian waterfall; the longer route followed by everyone else, with the possible exception of Low on his first ascent, leads one up the more southerly spur which forms the left bank of the Kadamaian.

Burbidge and his companion left Kiau on August 19th, following the Tampassuk again back to the coast; they accomplished the journey in five days, sleeping the nights at Koung, Kambatuan, Sineroup, Ghinambor, and the house of Mr. Pretyman. Thence they sailed to Labuan, reaching that island on August 30th.

Burbidge notes that this second journey occupied them thirty-one days from Labuan, and the first expedition twenty-three days.

In an appendix to this book the author remarks that the main object of his journey eastward was "the collection and introduction of beautiful new plants to the Veitchian Collection at Chelsea"; and in the summary of his results he considers that one of the most fortunate was the introduction alive of *Nepenthes rajah*.* He also states that "we were successful in finding all the large species of *Nepenthes* in one locality on the mountain for the first time."

Miss Gibbs comments on the fact that she saw no *Nepenthes rajah*, although she found the other three species. This accords with the observations of Low, St. John, Haviland and myself, † and led me to inquire if by chance these two travellers had followed some other route. I had hoped that Mr. Veitch might have preserved some notes on his expedition which would clear up once and for all the doubts concerning the route followed by himself and Burbidge, but, unfortunately, Mr. Veitch writes that his notes are now undecipherable owing to their having been wet in Borneo, and not cared for since. However, Mr. Veitch very kindly writes a most interesting letter, which I venture to quote almost in full:—

"I should not have said that *Nepenthes rajah* was at any time found in exactly the same locality as *N. edwardsiana*,

* Sir H. J. Veitch very kindly writes to me from the Royal Exotic Nursery, Chelsea, as follows: "We never succeeded in cultivating very successfully the *Nepenthes* from Mt. Kinabalu, and I believe the only living plant of *N. rajah* is in the Botanic Gardens at Glasnevin, Dublin, where Sir Frederick Moore has succeeded in growing it well. *N. lowii* does not exist in Europe so far as I am aware."

† I found this very unmistakable *Nepenthes* in the Marei Parei spur, where it was not uncommon,

&c.; it was probably found on the same day, but it would be at higher altitudes, and always in the region of and among moss and excessive moisture, while the others were found in comparatively drier positions, and generally climbing over scrub or low trees.

“There was a happy valley we ascended as a separate excursion where the forest growth was less dense and overgrown, where we found a large number of *Nepenthes*—this to my mind was on the left or sea side of the main road to Kinabalu, and was made from the last house on the way to the mountain top. I should say this is the place Burbidge refers to where the species were growing together, but we climbed many hundred feet between finding *N. edwardsiana* and *N. rajah*.

“I have again been dipping into the ‘Gardens of the Sun,’ but find I cannot add anything to the particulars given there, which I regret, as I should have liked to help you in your research, had it been possible. My work was of the practical sort—looking after the men, our plants, and the pot!

“One last note. I always understood that Burbidge and I on our excursion followed the same route, *or nearly so*, as S. St. John, but routes and native villages change considerably in twenty years!

“Though I have, I fear, helped you but little, I still remember with the greatest delight my trip to Kinabalu. . . . Sir Hugh Low came to see me here several times after he retired from the Service, and I much enjoyed a chat with him.”

It will be interesting if some future traveller can identify Burbidge’s route beyond all question.*

His collections added over fifty species of Ferns to the Bornean list, of which thirteen were new to science. Of the seventeen species of Birds obtained on the two expeditions, five were described by R. B. Sharpe as new.

1879. *Bulletin de la Société belge de géographie*. 1881. “Borneo.” By J. Peltzer.

I have not been able to consult this article, but Posewitz † states that this traveller “climbed the Marei-Parei Peak

* Mr. H. N. Ridley informs me that Mr. Burbidge wrote up his accounts in England, and in consequence made several inaccurate statements. Perhaps the Kinabalu puzzle is to be explained thus; however—*de mortuis nil nisi bonum*.

† Posewitz, p. 65.

of the Kina-Balu *massif*. Returning to Kian (= Kiau) he passed through the districts to the south-east of Kina-balu, and after scaling several mountain ridges, reached the great valley plain of Suan."

1887. *Journal of the Straits Branch, Royal Asiatic Society* (Singapore). No. 19. 1888. Pp. 1-25. "Report on a Journey from Tuaran to Kiau and Ascent of Kina-balu Mountain." By R. M. Little.

The object of this visit to Kinabalu was to receive the submission of the native chiefs of that district. Mr. R. M. Little, an Assistant-Resident in the service of the British North Borneo Company Government, left Gaya on February 16th, 1887, for this purpose. He followed the Tuaran route, which he summarizes briefly at the end of his paper thus:—

"Gaya Island to Borongis, Tuaran, *viâ* Mengkabong, by boat six hours, and across plain to Buntai, two hours' walk.

"Buntai village to Sinilau village, $3\frac{1}{4}$ hours' walk—hills.

"Sinilau village to Bungol village, $8\frac{1}{4}$ hours' walk—hills.

"Bungol village to Labong Labong village, six hours' walk—hills.

"Labong Labong village to Kiau village, $2\frac{3}{4}$ hours' walk—hills."

He also gives a summary of the Tampassuk route, remarking that it is the longest and by no means the easiest, owing to the continual crossing of rivers. This disadvantage, however, is obviated nowadays by the excellent bridle path which follows the left bank of the Tampassuk river all the way to Koung.

Little's summary of the Tampassuk route is given thus:—

"Gaya Island by boat to Government station, Tuaran, six hours.

"Station to Madang village, eight hours' flat walking.

"Lemawng village to Tambatuan village, five hours (hill) (on the Tampasuk river).

"Tambatuan village to Labong Labong village, five hours (flat) (on the Tampasuk river).

"Labong Labong village to Kiau, $2\frac{3}{4}$ hours (hill) (on the Tampasuk river)."

This traveller reached Labong Labong on March 5th, and next day received the oath of allegiance from the natives of the village, and established peace between the

coast and hill Dusuns, a rectangular stone being planted to commemorate the event.

Arriving at Kiau that day he noted that this village was "divided into three sections—upper, middle, and lower. The slopes around the houses are grazed by cattle and buffaloes; water is brought down by means of bamboo piping." Middle Kiau is given as 2635 ft. above the sea-level. Upper Kiau has since been deserted, though the remains of houses are still clearly seen.

Another treaty stone was planted at Kiau. On March 9th Mr. Little started for the summit of Kinabalu, following the Kadamaian river to Minitindok, where he passed the first night. He made this 2651 ft. above sea-level. Next day he and his Dusun followers continued up the river for half a mile, and then struck up the right bank in order to inspect some caves. A good view of the cascade, originally described by St. John, was obtained, and Little names it Regina Falls "in honour of her well beloved Majesty." The caves were reported as simply shallow holes.

On the 11th the party proceeded to Tamborangah (= Kamborangah), which they reached in three hours (alt. 7328 ft.), and next day reached Pakka cave after $4\frac{1}{2}$ hours' walk (alt. 10,262 ft.). On the 13th, accompanied by eleven of his followers, Little ascended to the summit plateau, reaching a spot between Victoria Peak, "the highest and most easterly, and the adjacent peak which the Kiau men have just climbed" (presumably Low's Peak, which is, however, 5 ft. higher than Victoria Peak). As will be seen in the map, the summit of Kinabalu is divided into an eastern summit plateau and a western summit ridge; the former accessible, the latter apparently not. On the eastern portion, the easternmost peak is not Victoria Peak, but one slightly lower, named in after years Alexandra Peak; it is possible that Little meant this for Victoria Peak, as he correctly gives the next peak to the west as St. John's Peak.

Little makes the total height 11,562 ft. Whitehead, who made the ascent a year later, states that Little only reached Low's Gully, which "he evidently considered the top." The Dusun sub-chief Gawang was entrusted with Little's bottle containing the names of the eleven natives and their European leader who had reached the summit plateau. Gawang deposited this on the summit of St. John's Peak. When they reached Kiau three days later it was found that Limbawan, the guide, had brought down

Messrs. Low & St. John's papers—the former's in a bottle, the latter's in a tin. The writing was partly indecipherable. Mr. Little confesses to feeling vexed with Limbawan for removing these historic papers, but he does not confess to having returned them.

On March 20th he left Kiau and followed the Tampassuk route as far as Ghinambor, and thence to Tuaran *viâ* Madang village.

[1888. *Proceedings of the Royal Geographical Society*. Vol. x. No. 3. 1888. Pp. 134–146. "Summary of Explorations in British North Borneo." By Admiral A. C. Mayne, C.B., M.P.

The explorations discussed in this article date from 1878 to 1887. This period only includes one ascent of Kinabalu, namely, that of R. M. Little, whose account has just been dealt with above. The following passage from Admiral Mayne's summary may be noted: "The latest journey of which we have the record was made last year by Mr. Little, the Assistant-Resident before-mentioned, who ascended our highest mountain, the Kinabalu, the elevation of which, as marked on the map, he considers 2000 ft. too much, though he claims to have reached a higher peak than either Low or St. John. Its position and altitude were fixed by the late Sir Edward Belcher when in H.M.S. 'Samarang'; and I doubt the propriety of seriously suggesting a reduction of 2000 ft. from his trigonometric determination on the unchecked authority of a small pocket aneroid not in its first youth."

This summary has some interesting notes on the supposed existence of a Kinabalu Lake, to which we shall refer later.]

1887. *Exploration of Mount Kina Balu, North Borneo*. By John Whitehead. 1893. Pp. 1–317, with plates and woodcuts. (Chapter vi. contains an account of Whitehead's first successful expedition.)

To the author of this book belongs the credit of the first extensive exploration of the mountain, and to him we owe our first real insight into its zoological treasures.

He spent over three years in the East, leaving England in October, 1884, and after visits to Malacca, Java, Palawan, and North Borneo, returned again in April, 1888.

During this period he made two unsuccessful attempts to reach Kinabalu, the first in 1885 and the next early in

1886. Unrest among the natives of that district prevented him getting further than Gaya on the first occasion and Tampassuk on the second.

On January 25th, 1887, he left Labuan on his third attempt to reach the mountain. He followed the Tampassuk route, using buffaloes as far as the junction of the Pangataran and Tampassuk, and thence on foot to Melangkap. From here he followed up the bed of the Pangataran, being told by the natives that Kinabalu could be ascended by this route. However, a hard day's walk convinced him of the impossibility of this, so a hut was built in the jungle, where he spent a month collecting.

During his stay here the Company's Officer, Mr. R. M. Little, paid a brief visit to the mountain, as described under our last heading. Whitehead comments on the useless nature of these hurried visits, especially when they take place but once in five or six years. He writes thus: "I know as a fact that the very tribes which this Officer visited, and settled their tribe disputes, made a head-hunting raid the following spring." Nowadays the Company's Government is very much more in touch with the natives, as the Officer in charge of a district is supposed to make a complete round of visits each month. In Whitehead's time the Kinabalu district was managed from Gaya, a week's journey in distance. But now that the districts are parcelled out into more manageable sub-districts, the natives live a more peaceful life under the restraining influence of a sound European government, which is more in evidence now than it was in Whitehead's day.

The greatest altitude reached by Whitehead during his stay on the Pangataran was 4800 ft. After a month in this camp he spent some three weeks at Melangkap, and returned again to the coast by the Tampassuk. He summarizes the results of this expedition as follows:—

" . . . eight weeks were spent in bird-collecting in the neighbourhood of Melangkap and amongst the mountain spurs. During this period we collected some three hundred birds, eighteen of which were new to science, and many others added to the ornis of Borneo for the first time. . . . Besides birds, I had several new mammals, including two new squirrels and several rats. There were also four new reptiles—a *Draco*, a snake, and two new frogs; and six new butterflies, four of which were *Papilios*."

He reached Labuan again on April 16th.

1888. Chapters viii. and ix. are devoted to Whitehead's next visit to the mountain.

He left Labuan on his fourth and last expedition to Kinabalu in December, 1887. After the usual delays in getting carriers together, he left Abai on January 3rd, 1888, having engaged Illanuns and buffaloes to transport him to Melangkap. Their first day's journey brought them to Ghinambor, the second to Teung, a village on the right bank of the Pangataran, to which they had strayed in error. After a day's delay they did the two hours' journey to Melangkap (given as 1300 ft.). Whitehead spent a fortnight collecting here again, and then journeyed down-river to Tambatuan, and thence to Koung, where he stayed the night. Next day he reached Kiau, putting-up in the house of Kabong, one of the headmen of the village, a position which was shared by Kurou, who acted as guide for Burbidge ten years before. Whitehead notes that this man remembered Low and St. John, and "speaks of these two gentlemen as the only two white men he ever took a fancy to."

On January 25th they left Kiau for the ascent, accompanied by Kurou, "bringing with him his son—a precocious boy of ten years old with a loud voice and a huge mouth," who developed later into Sumpot, taker of two heads, chief of Kiau and guide with me in 1913.

They followed the usual course of the Tampassuk or Kadamaian River—to give it the proper name for this upper portion of the Tampassuk—and reached Lobong (given as 4800 ft.), which was christened by Burbidge as "Sunless hole." Whitehead mentions the slender orange tree in front of the big overhanging rock, which the natives told him had been planted by Low. Whitehead laments the miserable damp of this place, where he spent five days. The excessively steep sides to this narrow gorge make it very difficult to get about for any collecting. During my stay there in September, 1913, I had the only flat bit of ground cleared just in front of the rock; this let in the sun and improved the place considerably. Bird and insect life were then more in evidence.

On January 31st Whitehead moved up to Kamborangah, where he stayed until March 3rd, suffering much from ill-health and exposure to the raw climate, but doggedly persevering all the time in his collecting work. The results amply repaid him, as he obtained no less than ten species of birds, four of which represented new genera, besides a new rat and a new frog.

During his stay in this bleak spot Whitehead made one excursion to the summit, leaving Kamborangah on February 10th, and sleeping the night at the Pakka cave. Accompanied by some Dusuns of Kiau he climbed to the summit the following day, reaching Low's Peak, which he made out 13,525 ft. Whitehead is the first to note that this is higher than St. John's Peak—a lucky guess on his part, although he writes "decidedly higher," as the difference is only 15 ft. He left a note in a bottle giving the names of his little party, the date, temperature (fifty-nine degrees), and time (11 a.m.). This he buried beneath some stones on the summit. Subsequent visitors do not mention finding it. After visiting Low's Gully he returned to Pakka, and thence to his camp at Kamborangah. During his month there the temperature at night varied from forty-two degrees to fifty-two degrees; in the day from sixty degrees to seventy degrees Fahr. The height of Kamborangah is given as 7850 ft.

Whitehead reached Kiau in two days, and then went on to Melangkap, a journey which he accomplished in six hours, thanks to "the splendid carrying powers of the Kiau Dusuns." During his absence on the mountain a native collector had been busy at Kiau and two more at Melangkap, who all helped to swell the size of his collections.

On March 10th he returned to Kiau again, and on the 12th went down to the Kinokok valley, where he spent four weeks encamped at 3650 ft. The greatest find here was the beautiful new Trogon, afterwards named by Dr. Sharpe *Pyrotrogon whiteheadi* in honour of its discoverer. On April 9th he returned again to Kiau and thence to Melangkap. He gives a little description of Kabong's house at Kiau:—"This house is quite a zoo; below a herd of pigs grunt and squeak, dogs fight and snarl, cocks crow, hens cackle; above babies squealing, men and women laughing and talking. Combine all these sounds and you get an idea of the babel in a Dusun house." To complete the picture he might have suggested that most of the above members of the animal kingdom, when living in a confined space, are liable to produce a variety of *smells* not altogether attractive to the human nasal organ. Then there is the smoke of the house to fill the eyes and throat of the visitors: and last of all the bed-bug, known to the Dusun as "wongking," which effectively prevents any thought of sleep if all the other above-mentioned "in-

redients" of a Dusun house have failed to do so. However, the Dusuns are not the only tribe in Borneo who can provide a similar "rest" for the traveller; nor, perhaps, is Borneo the only country where such are to be found.

Not content with his prolonged exploration of Kinabalu, and in spite of ill-health, Whitehead spent another six weeks at Melangkap and neighbourhood, finding new birds up to the last; thus his entry on May 14th: "Tungal brought me three specimens of a Whistling Thrush closely allied to one of the Himalayan species; this was new, and has been named *Garrulax schistochlamys*." Then, again, on May 21st: "The Kadyans returned from Kapar with our last new bird—an interesting little Timeline closely allied to a Himalayan species; this bird has been named *Turdinulus exsul*."

On May 23rd he left Melangkap, and, following the Tampassuk, reached the coast on the 26th, and thence by boat to Gaya and Labuan, where he arrived on May 30th after an absence of nearly six months.

Whitehead's book contains some fine pictures of Kinabalu drawn by himself, as well as beautifully coloured plates of the finest of his new birds and insects. For altitudes he gives Kiau as 2800 ft., Kamborangah as 7350 ft., and Pakka as 10,300 ft. The results of his expeditions are described in the following papers:—

- (a) MAMMALS, by Oldfield Thomas, in Proc. Zool. Soc. Lond. 1889. Of the twenty-one species obtained eight* were new to science, five more new to Borneo.
- (b) BIRDS, by R. B. Sharpe, *Ibis*, 1887–1890. The author notes that Whitehead added sixty-nine species and twenty-five genera of birds to the Bornean list. Of these Dr. Sharpe's list shows that forty-two species and four genera were also new to science. The total number of species collected by Whitehead in Borneo was two hundred and eighty-six, of which one hundred and sixty-one, representing one hundred and twenty-six genera, were found on Kinabalu.
- (c) REPTILES AND BATRACHIANS, by M. F. Mocquard, in *Nouvelles Archives du Museum* (Paris), 1890. Of

* The author of this paper gives six, but Whitehead claims to have been the first to discover *Semnopithecus hosei* and *Tupaia montana*.

the forty-six species collected, ten are described as new, two necessitating new genera.*

- (d) LAND-SHELLS, by E. A. Smith, in *Ann. Mag. Nat. Hist.*, and by Lieut.-Col. Godwin-Austen in *Proc. Zool. Soc. Lond.* 1891. Ten species collected, three new to science.
- (e) BEETLES, by H. W. Bates, in *Proc. Zool. Soc. Lond.*, and H. S. Gorham, descriptions of twenty-five new species and seven new genera.
- (f) BUTTERFLIES, by H. Grose Smith, in *Ann. Mag. Nat. Hist.* Sixteen new species described.
- (g) RHYNCHOTA, by W. L. Distant, in *Ann. Mag. Nat. Hist.* Four new Cicadas and one Coreid described.

In concluding our summary of Whitehead's expedition, it may not be out of place to quote Dr. R. B. Sharpe's concluding paragraph to his series of papers on the birds of Kinabalu. He writes: "In conclusion, I once more offer my congratulations to Mr. John Whitehead on the success of an expedition planned and executed with so much determination in the face of so many obstacles and dangers; while his father, Mr. Jeffery Whitehead, who provided the 'sinews of war,' must feel proud that his son has carried out one of the most important, as well as one of the most successful, scientific expeditions of modern times—one, too, from which the gain resulting to our ornithological knowledge has not yet been thoroughly gauged." (*Ibis*, 1890, p. 292.)

Some ten years later Whitehead met his death in Formosa while on a similar expedition in the interests of his favourite branch of natural history.

1892. *Transactions of the Linnean Society of London*. Second ser., Botany. 1894. Vol. iv. Part 2, pp. 69–263, pls. xi.–xx. "On the Flora of Mount Kinabalu, in North Borneo." By O. Stapf, Ph.D., &c.

The author of this paper discusses all the plants known from Kinabalu up to that date; the greater part of the material studied comes from the collection of Dr. G. D. Haviland, who, as Curator of the Sarawak Museum, made an expedition to Kinabalu early in 1892.

* Dr. Boulenger, in *Ann. Mag. Nat. Hist.* 1891, ser. 6. vol. vii. p. 341, states that the first Reptiles and Batrachians from Kinabalu were described by him. He considers that some of Mocquard's species are not valid, but he recognises altogether twelve new species collected by Whitehead.

Accompanied by his cousin, Dr. Haviland left Kuching, Sarawak, on March 1, and reached Gaya (the island off Jesselton, and at that time the seat of the Government of the West Coast) on the 5th. After five days they proceeded to Tuaran, and on the 12th commenced the land journey to the mountain. Three days brought them to Bungol, the fourth to Koung, and the next day they reached Kiau. After a day's collecting here and another day wasted by a journey of half a mile to the Dusuns' farms, they commenced the ascent on the 19th, and reached Lobong (noted as 5000 ft. above the sea) that afternoon. After a week here they ascended to Temburungo (= Kamburangah), and next day (the 27th) to the Pakka cave, where Dr. Haviland noted the temperature of the air at 5 p.m. as 11° C., of the water in the torrent 10° C. "The aneroid read 20.84; the boiling-point was by one thermometer 194° F., by another 90° C." At daybreak on the 28th the temperature was 8° C.

Dr. Haviland writes that they "reached the top of the sharp northern ridge about its middle"—no doubt Low's Peak. They returned to Kamborangah that day, but ascended again to Pakka on April 2nd, and stayed there till the 9th, continual clouds preventing them going to the top again. The height of the cave was given as 10,450 ft., Kamborangah as 7750 ft.

They returned to Lobong on the 11th, to Kiau next day. Ten days were then spent in the Pinokok valley, whence a visit was made to Marei Parei. On April 24th the expedition commenced the return journey to the coast.

The botanical importance of this expedition may be judged from Dr. Stapf's list of the Kinabalu flora, in which he enumerates four hundred and fifty-one species, of which no less than one hundred and ninety-seven are described as new. Of these new species Dr. Haviland alone was responsible for over a hundred and fifty. Dr. Haviland also collected a few mammals, birds, and insects for the Sarawak Museum, but the greater portion of his time was devoted to botany.

The latter part of Dr. Stapf's paper is devoted to an enumeration and description of the species (pp. 127-263), but the first portion has much of interest for the general reader. He distinguishes four zones:—

1. The *zone of the plains and low hills*, or, briefly, the *hill zone*, from the littoral which skirts the coast as a belt of varying breadth up to 3000 ft.

2. The *lower mountain zone*, from 3000 ft. to 6000 ft.
3. The *upper mountain zone*, from 6000 ft. to 10,500 ft.
4. The *summit zone*, from 10,500 ft. to the very summit (13,698 ft.)."

Several pages are devoted to a discussion of the affinities of the flora of these different zones, and a table is given to show the geographical distribution of all the species. Perhaps the most interesting point that comes out is the relationship of the summit zone flora to that of the Boreal-Himalayan region on the one hand, and to the Australian, New Zealand, and South American region on the other. For instance, we may notice two species of Gramineæ (Grasses) collected by Haviland at 13,000 ft.: (i) *Agrostis canina* occurs in the northern hemisphere from North America and Europe east to Siberia and south as far as the Himalayas, and in the southern hemisphere in Patagonia and New Zealand; (ii) *Deschampsia flexuosa* ranges in Europe from Scandinavia to the Mediterranean and to the Caucasus; in North America from Greenland to Canada and the northern United States; in the southern hemisphere it occurs in the Falkland Islands and Magellan Strait. The summit of Kinabalu helps to bridge the enormous gap in the range of these two species.

The next important paper on the flora of Kinabalu is that by Miss L. S. Gibbs, published in 1914, to which we shall refer later.

1899. *Journal of the Straits Branch, Royal Asiatic Society* (Singapore). No. 34, July, 1900, pp. 49-88, pls. i.-iv. "An Expedition to Mount Kina Balu, British North Borneo." By R. Hanitsch, Ph.D.

This is an account of a collecting expedition undertaken by Dr. Hanitsch, Director of the Raffles Museum, Singapore. He was given six weeks' leave for the trip, and starting from Singapore on March 4th, 1899, he reached Gaya, the island opposite Jesselton, British North Borneo, on March 11th, and the mainland next day. The Tuaran route was chosen, and a start for the land journey made from Panjut on the 13th. The succeeding nights were passed at Bandeian (on the Tuaran river), Kappak, Kalawat, Bungol, Koung, and Kiau, the last-named village being reached on March 18th. After the usual delays for coolies, a start for the ascent was made on the 21st, and they camped that night under a huge slanting rock, presumably Minitindok. The following day they reached

another large overhanging rock, which was evidently Lobong,* the altitude being noted as 4140 ft.

Owing to lack of time all idea of any further ascent had to be given up, so two days were spent in collecting at this spot, and then the descent was commenced on March 25th. Another day was allowed for collecting at Minitindok, after which the expedition proceeded to Kiau, leaving again next day, March 28th, for the return journey to the coast. The same route was followed, nights being passed at Koung, the river Menternan, Bungol, Kalawat, Kappak, and Panjut. At Kalawat they met Mr. H. T. Burls, an oil-pro prospector, on his way to Kinabalu. On April 4th Dr. Hanitsch left Panjut, and after sundry delays reached Gaya on the 9th, Labuan next day, and Singapore on the 14th, after an absence of six weeks exactly.

His collections included the following species new to science: Two snakes, one lizard, one frog, one freshwater fish, and one crab. Considering the very short time spent in collecting, these results form an interesting indication of what might be done on a longer visit.

1899. *The Geographical Journal*. Vol. xiv. No. 2. August, 1899. Pp. 207, 208. "Observations on Mount Kinabalu." Mr. H. T. Burls sends an account of his ascent to the Royal Geographical Society.

The following points of interest may be taken from this account:—

"Mr. Burls . . . succeeded in reaching a point where the boiling-point thermometer read $191^{\circ}9$ at an air-temperature of 49° , giving an altitude of 11,643 ft. The distance to the summit he estimated at only 400 ft., which would give the total height of the mountain as 12,043 ft."

A bottle containing the name of this traveller was found on the summit of one of the peaks some eleven years later by Mr. D. R. Maxwell, in which case the following passage is worthy of remark: "The upper 1200 ft. was a surface of bare rock so steep that it was impossible to walk on it with boots, and, being unprovided with any substitutes, Mr. Burls was obliged to give in after covering two-thirds of the distance, but his Chinese servant and four Dusun carriers completed the ascent."

The lowest temperature recorded was forty-four degrees at 10,360 ft. on the night of April 13th, presumably in

* Sumpot, the chief of Kiau, remembered Dr. Hanitsch's ascent, and informed me that his expedition camped here.

Pakka cave. This traveller notes that the central core of the mountain is syenite; that he did not find metamorphic rock surrounding the mountain; and that at 8800 ft. there was a direct transition from limestone to syenite, the former of which appears to be underlain by a shale, followed by a sandstone at 7175 ft.

1899. About this time John Waterstradt, a professional insect-collector, made an ascent. I have been unable to trace any written records of his visits to Kinabalu, but I gathered from the natives at Kiau that he had made three lengthy visits: the first about 1894, the next about this date (1899), when he went to the summit for the first time, and, lastly, about 1908. The large number of butterflies and beetles on sale in many dealers' catalogues are the results of his work; also the remarkable proficiency of the natives of Kiau in the art of "bug-hunting." They told me Mr. Waterstradt had a regular scale of pay for each kind of butterfly—two or three cents each for some, two for a cent for another kind, five cents, perhaps, for another. I made a note of some of them, as they afford an interesting comparison with a dealer's price list, where *Papilio andromache* is marked 50 marks, and others similarly priced.

1910. *The British North Borneo Herald*. Vol. xxviii. April 1st, 1910. Pp. 65-67. "Ascent of Mount Kinabalu." Report by D. R. Maxwell, Assistant District Officer, Province Keppel.

The writer of this account escorted Miss L. S. Gibbs, a botanist, to the summit of Kinabalu. This lady went by train from Jesselton to Tenom, and thence by bridle path to Kiau, whence she paid a visit to the Marei Parei spur before making the ascent. This was accomplished in the usual three stages, the nights being passed at Lobong, Kamborangah, and Pakka. The summit was reached on February 20th, and a bottle containing the names of Miss Gibbs and Mr. Maxwell deposited on Low's Peak.

Mr. Maxwell climbed another peak, where he found "a bottle saying that on April 13th, 1899, H. T. Burls had accomplished the ascent with one Chinaman and four Kiau Dusuns. Mr. Waterstradt's bottle was also found below."

The thermometer readings noted daily at 4.30 p.m. and at nightfall were:

Lobong, 65°–61° Fahr.

Kamborangah, 56°–52° Fahr.

Pakka, 50°–40° Fahr.

The summit of Kinabalu was noted as ten degrees (sheltered), and ice was found on the top. I was fortunate enough to meet Mr. Maxwell in Jesselton, and he told me that his record of the temperature for the summit was undoubtedly due to some mistake, but that there was no doubt of the ice being found there.

St. John speaks of a hoar-frost at Pakka and of hail on the summit; but this seems to be the first record of ice. The glistening white granite cap has given rise to stories of snow on the top, but actual records of snow are still wanting.

Mr. Maxwell's report contains much information of use to anyone wishing to make the ascent. He gives a short summary of the geographical features of the Kiau side of Kinabalu, and useful notes on the stages of the ascent and return. He mentions the recognised scale of wages, *viz.* ten dollars * to each guide and three dollars to each coolie for the journey from Kiau to summit and back.

Miss Gibbs read a paper on the botanical results of her expedition before the Linnean Society of London in June, 1913, from which we get more details.

1910. *Journal of the Linnean Society* (Botany), 1914. Vol. xlii. No. 285, pp. 1–240, pls. 1–8. "A Contribution to the Flora and Plant Formations of Mount Kinabalu and the Highlands of British North Borneo." By Lilian S. Gibbs, F.L.S.

Miss Gibbs, the first lady to visit Kinabalu, broke entirely new ground by approaching the mountain from the south instead of the usual routes (Tampassuk or Tuaran).

Landing in Jesselton, the train took her eighty-seven miles south and away from Kinabalu to Tenom, the Residency of the interior. From here Miss Gibbs followed the bridle path, passing through Melalap and Senagong to the Kaningau plain, which is given as 1000 ft. above the sea and about twenty miles long. After two days at the Government Residency here, the journey was continued across the plain to Apin Apin, thence to Tambunan, situated on the plain of that name, 1870 ft. A District Officer

* The Straits Settlements dollar is used in British North Borneo, value two shillings and fourpence in English currency.

is stationed here, and Miss Gibbs notes that this is the farthest station in the interior at present. Continuing the journey north, Korikut is the objective of the next stage, which Miss Gibbs failed to reach that day owing to floods; the following day she arrived at Mensangau, and the next at Bundu Tuhan rest-house, which is perched on a ridge 2700 ft. just opposite the Kinabalu mass. Thence to Kiau was the last day's journey.

"Arriving at Kiau was like treading on classic ground," writes Miss Gibbs, and continues thus: "Amongst the usual crowd of natives squatting in the public apartment of the rest-house, Sumpot, an oldish man of self-respecting appearance, was presented as the headman of the village. He immediately handed me a letter written by Haviland, stating that he had acted as guide to him in his expedition up the mountain. My mind was already full of the previous experience and the results of those whose devoted work had rendered this mountain a Mecca to biologists for the present day; and that letter seemed almost an augury from one whose unknown fate in South Africa was met in the quest of his life's work."

Sumpot still has this letter; he showed it to me with great pride in 1913, relating how interested other European travellers were on reading it. I explained that it was of particular interest to me, as Dr. Haviland came from the Sarawak Museum like myself.

Bad weather prevented Miss Gibbs from making the ascent at once, so a few days were spent in a botanical examination of the Gurulau spur which runs up behind the village of Kiau, and a few more days on the Marei Parei spur. It is noteworthy that Miss Gibbs failed to find any sign of the big Pitcher-plant, *Nepenthes rajah*, recorded by St. John and Burbidge from this place, and found by me, three years after Miss Gibbs, in some quantity. She explored the higher slopes above this plateau, reaching an altitude of 8000 ft., which was some 2000 ft. higher than St. John and Low's record.

On returning to Kiau the weather improved, and Miss Gibbs writes that a start was made for the ascent on February 22nd, and that she returned to Kiau on February 27th. The note I found on the summit, however, records her arrival there on February 20th.

The usual route was followed to the summit, but Miss Gibbs' full account of the varied flora observed on the way up should be carefully read by a botanist. She notes Kam-

borangah as the only locality for *Patersonia* (Iridaceæ) outside extra-tropical Australia,* and "a few dead trees wreathed in some melancholy-looking *Lycopodium casuarinoides*, the only approach to anything like a *Casuarina* seen anywhere, though previous writers all record this unmistakable genus both here and on the Maraiparai."

Miss Gibbs comments on the helplessness of the natives in enduring the cold at this altitude, and in the final part of the ascent she records "an appreciable film of ice about 5 mm. thick," filling the cracks and holes by the side of the Kadamaian. As noted in the last account of this expedition, the party reached Low's Peak and deposited records of their visit under a stone.

The zones of vegetation suggested by Stapf are modified somewhat by Miss Gibbs, who recognizes seven formations:—

1. The secondary forest (2500 ft.—4000 ft.).
2. The primary high forest (3500 ft.—6000 ft.).
3. The mossy forest (6000 ft.—9000 ft.).
4. The scrub formation (on the exposed serpentine).
5. The low-sheltered forest (9500 ft.—10,500 ft.).
6. The sub-summit dwarf forest (above 10,500 ft.).
7. The granite core (above 10,500 ft.).

The return journey was made by the Tampassuk route to Kotabelud and thence to Tuaran.

Pages 56 to 239 of this paper are devoted to the botanical collection, which were particularly valuable and interesting, as the following figures indicate:—

The author's summary shows that about one thousand plants in all were collected, of which eighty-seven proved new to science. Of these Kinabalu claims three hundred and thirty-seven specimens, comprising three new genera and thirty-eight new species. She added no less than one hundred and twenty-nine species to Stapf's list of Kinabalu plants.

1910. *The Sierra Club Bulletin*. Vol. viii. No. 1. January, 1911. Pp. 18–24, pls. xiv., xv. "A Vacation Trip to Mount Kinabalu in British North Borneo." By F. W. Foxworthy.

Dr. Foxworthy made his visit just a month after Miss Gibbs. He came down from Manila to Jesselton, and thence up the coast again to Usukan Bay, and on to the

* Another species, *P. lowii*, Stapf, grows on the Marei Parei spur at 5500 ft.

Government station at Kotabelud. From here to the base of the mountain he notes as thirty-four miles, which he accomplished in two days, following the Tampassuk route to Kiau. After the usual day of preparation at Kiau, he commenced the ascent on March 16th, and reached Pakka on the 18th, where he noted the highest temperature as fifty-four degrees at 1 p.m. The summit was reached next day, and "a Sierra Club cylinder containing a record of the date and the names of the men accompanying me" was deposited alongside the bottle left by Miss Gibbs the month before.

When I visited the summit three years after, the Sierra Club cylinder had been appropriated by the spirits of the mountain, though Dr. Foxworthy's note was found in a bottle with that of Miss Gibbs.

Dr. Foxworthy left Pakka on the 20th, and reached Kotabelud again on March 24th. His article is illustrated by pictures of Kamborangah, Pakka, and the summit. The first and last of these pictures are reproduced in Miss Gibbs' paper which we have just discussed.

1910. *The British North Borneo Herald*. Sept. 1st, 1910, pp. 157, 158. "The Ascent of Mount Kinabalu." By H. W. L. Bunbury.

This appears to be the only official account published of one of the most important expeditions to the mountain. The party of visitors consisted of Capt. Learmonth, R.N., and Lieut. Harvey, R.N., of H.M.S. 'Merlin'; Mr. Clarke, of the British Borneo Exploration Company, and Mr. Scott Brown, of the Hepworth Cinematograph Company.

Mr. H. W. L. Bunbury, the District Officer, met the party at Usukan Bay on June 4th, 1910, and after a week at Kotabelud they set out on the expedition proper on June 12th. Nights were spent at Kabaion, Koung, and Kiau. Leaving the last-named village on the 16th they followed a path through the paddi farms, striking the Kadamaian above the Minitindok gorge; thence by the usual route to Lobang. Next morning Kamborangah was reached in three hours and forty minutes, the next stage to Pakka cave taking about the same time. On the 18th a preliminary trip to the summit plateau was undertaken to find a suitable spot for another camp. The next day the whole party, with the exception of Mr. Clarke,* moved

* Mr. Clarke visited the summit on the 20th, returning to Pakka the same day and to Kiau the next day.

up to their new camp, of which Mr. Bunbury writes: "The place where we camped was a patch of heather overlooking Ranau plain, and we named it Saiat Saiat (Dusun for heather)." The altitude is noted as about 12,000 ft.

This is the highest point that any Europeans have ever camped on the mountain. The party stayed there five nights, undergoing no light hardships owing to the raw weather and their exposed position. Mr. Bunbury notes that, in addition to the four Europeans, ten natives remained with the party at this camp; and he pays a tribute to the plucky way in which the Dusuns stuck to it "in spite of the cold and rain and sore feet caused by the constant climbing over rough wet rock." One of these—Umpoh—son of a former chief, told me, on my visit three years later, that Lieut. Harvey spent one night just below Low's Peak, altitude about 13,000 ft. This is not mentioned in Mr. Bunbury's account.

The five days were spent in careful survey work, resulting in the map of the summit plateau, which Capt. Learmonth has kindly allowed me to reproduce in this paper. As this is the only expedition that seems to have been properly equipped with surveying instruments, we may accept Capt. Learmonth's altitudes in preference to those of former writers. He makes the highest point (Low's Peak) 13,455 ft., *i. e.* some 200 ft. less than Sir E. Belcher made it seventy years ago. Altitudes of other peaks are given in the map.

Mr. Bunbury notes that they were unable to find a way round the head of Low's Gully which would lead to the unexplored north-eastern half of the summit.

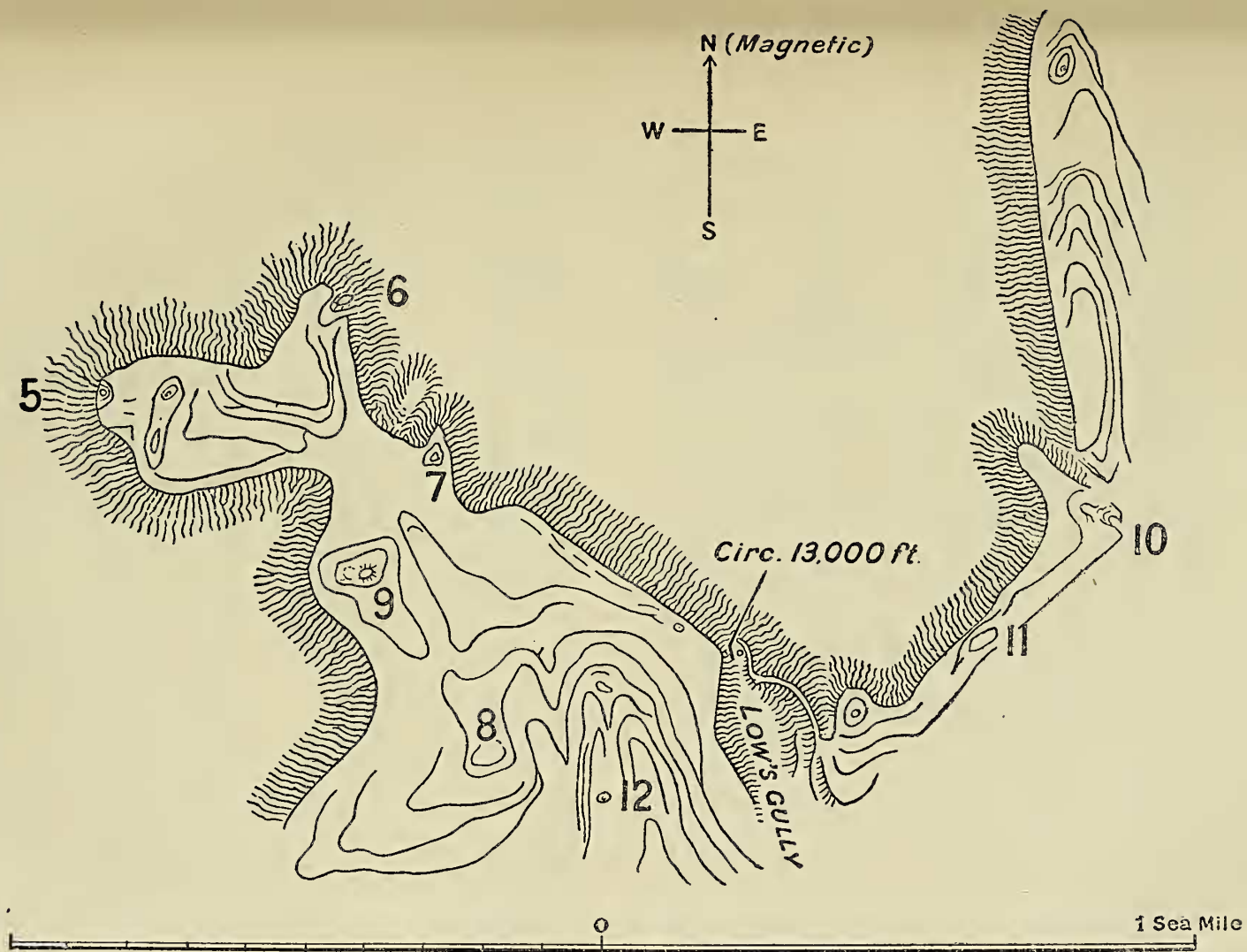
The party returned to Pakka on the 24th, to Lobang next day, and arrived at Kiau on the 26th. The return to the coast was accomplished *viâ* Tenom, the journey to that place occupying seven days.

Mention is made of a bottle found on the summit containing a document (apparently undated), on which a few lines of verse were written with the "Compliments of George H. Goss, Manhattan Hotel, New York, and Douglas Dodge, Simsbury, Connecticut."

I can find no other mention of these two names.

1910. *The British North Borneo Herald*. August 16th, 1910, pp. 146, 147. "An Unofficial Account of an Ascent of Kinabalu." By "Insaf."

This is an amusing account of the same expedition just



BY J. C. MOULTON.

SUMMIT OF MT. KINABALU..

Traced from Map by Capt. F. C. Learmonth, R.N., who visited it June 18-24, 1910.

Names and altitudes of peaks, from Capt. Learmonth's survey:—

- | | | |
|-------------------------------|----------------------------------|----------------------------------|
| 5. Alexandra Peak, 13,135 ft. | 8. Harvey's Peak, 12,860 ft. | 11. King Edward Peak, 13,405 ft. |
| 6. Victoria Peak, 13,450 ft. | 9. St. John's Peak, 13,440 ft. | 12. Sayat Sayat Camp, 12,500 ft. |
| 7. Low's Peak, 13,455 ft. | 10. King George Peak, 13,346 ft. | |

described. The misfortunes of some of the members, particularly of the writer, who describes himself as a welter weight, make interesting reading. His descriptions of native life add fresh details to what has already been written on Kinabalu.

1910. *Jahresbericht der Freiburger Geol. Gesell.* vi. 1913, pp. 12-39 and map. "Geologische Studien in Britisch-Nordborneo." By Dr. R. Pilz, Consulting Geologist to the British Borneo Exploration Company.

The above paper is a general descriptive essay on British North Borneo, with special reference to its geological features and mineralogical wealth. The Kinabalu massif is called by the author a tonalite rather than syenite or hornblende granite; however, I am given to understand by a competent authority that the distinctions between these two are very small, and that a sample I brought from the summit is undoubtedly hornblende granite.

Dr. Pilz gives no account of his expedition to the mountain, which took place in July, 1910. The record of his visit was found on the summit of Low's Peak, dated July 27th, 1910.

1911. In the same place another record of one Albert Grubauer, of Munich, was found, dated June 29th, 1911. After this the mountain appears to have been left in peace till my own visit two years later.

1913. *The Sarawak Gazette*, 1913. Vol. xliii. pp. 248-250, 262-264. "A Collecting Expedition to Mt. Kinabalu, British North Borneo." By J. C. Moulton, Curator of the Sarawak Museum.

This is a brief report on my expedition to the mountain in August and September, 1913. Accompanied by seven native collectors I left Kuching on August 8th, reached Jesselton on the 15th, and, following the Tampassuk route, reached Kiau on the 20th, Pakka cave on the 24th, and the summit of Low's Peak on August 25th. In all, six weeks were spent on the mountain—camps were made at Pakka, Kamborangah, Lobong, Minitindok, Kalupis, Marei Parei, and Kinokok. The return journey was commenced from Kiau on October 2nd, the Tuaran route being followed instead of the Tampassuk. Reached Jesselton on October 7th, Singapore on the 12th, and Sarawak on the 16th. The first part of the above report was published in the 'Sarawak

Gazette ' a fortnight later—November 1st—so that beyond an account of the journey little could be said of the scientific results of the expedition.

These may now be summarized as follows: No mammals or birds new to science were obtained; of the former, thirty specimens, representing thirteen species, were collected; of the birds, one hundred and eighty-seven specimens, representing sixty-two species. Owing to accidents with the spirit jars, our collections of fish, reptiles, and amphibia were poor. This deficiency, however, was more than made up by very large insect collections, which are still in process of being worked out. New butterflies (*Lycænidæ* and *Hesperidæ*) have been reported*; many new Coleoptera,† ten of them in the one family Tenebrionidæ; seven new dragonflies have already been described, including one new genus‡; some of the new species of Hymenoptera and Heteroptera are described in the present number of this Journal. Plants have not been completely studied as yet, although I have little doubt that there will be some novelties § among the one hundred and twenty species gathered, in addition to a *Begonia* which Mr. H. N. Ridley describes as new in this Journal.

Permission to make this expedition was obtained from the British North Borneo Company Government, and, thanks to their officers, every facility was afforded me for making the journey to and from the mountain without difficulty or loss of time. The Assistant District Officer at Kotabelud, Mr. P. Skene Keith, was deputed to accompany me to the mountain, and we broached a bottle of champagne together on the summit of Low's Peak on August 25th. I owe much to the forethought and general efficient way in which this young officer managed our transport arrangements from the coast to the mountain. It was with the deepest regret that I heard of his death less than a year

* "Some Undescribed Bornean Nymphalidæ," by J. C. Moulton, F.E.S. *Entomologist*, vol. xlviii. pp. 97-100, May, 1915. (Describes three Kina-balu forms in addition to those noted as new in the two families mentioned above.)

† "A New Cicindelid from Borneo," by J. C. Moulton, B.Sc., F.E.S. *Entomologist's Monthly Magazine*, No. 611, pp. 129, 130, and fig., April, 1915. Descriptions of other new Coleoptera have not been published yet.

‡ "Contributions to a Study of the Dragonfly Fauna of Borneo. Part III.—A Collection made on Mount Kina Balu by Mr. J. C. Moulton in September and October, 1913," by F. F. Laidlaw, M.A. (Camb.), F.Z.S. *Proc. Zool. Soc. Lond.*, pp. 25-39, 1915.

§ Two species are described by W. W. Smith in *Notes Roy. Bot. Gard. Edinburgh*, No. xl., 1915.

later. He died in Jesselton hospital on July 6th, 1914, from wounds received in an affray with native outlaws not far from his station. A kinder host and nicer travelling companion it would have been difficult to find.

II. NATIVE GUIDES FROM KIAU.

An inquiry as to who is the chief of Kiau leads one into a maze of intricate history, which I am afraid I did not succeed in unravelling. It seems that for a long time there have been two reigning houses, who, more or less, take it in turn to provide a chief of Kiau; occasionally a third family seems to come in. These headmen (the chief and pretender for the time) always accompany any Europeans on an ascent of Kinabalu.

On Low's first ascent, in 1851, Lemaing was the guide; in 1858, when St. John and Low reached Kiau, Lemaing was again called in to act as guide. St. John gives an amusing account of a dispute between Lemaing and Lemoung, the chief men of Kiau, the quarrel originally arising over the division of Low's goods seven years before! St. John writes: "The guide Lemaing carried an enormous bundle of charms, and on him fell the duty of praying or repeating some forms, which he continued for two hours by my watch. To discover what he said, or the real object to whom he addressed himself, was almost impossible through the medium of our bad interpreters; but I could hear him repeating my name, and they said he was addressing the spirits of his ancestors, and imploring their forgiveness for invading in our company their place of rest, for it is the belief of all the Ida'an that the summit of Kina Balu is the heaven of their race."

Later St. John recounts how Lemaing walked off with some brass wire. He goes on to say: "I am afraid I very much disconcerted him, as with one hand I tore the prize from his grasp, and with the other put a revolver to his head, and told him to beware of meddling with our baggage." On my visit to Kinabalu in 1913 I asked Sumpot, the present chief of Kiau, if he knew of this incident; he laughed, and replied that he had often heard his father, Kurou, speak of it. Kurou was the son of Lemaing; the present chief is thus the grandson of Low's guide.

On St. John's second journey Lemoung was chosen as guide, as Lemaing had been so unsatisfactory before.

The three ruling families of Kiau and the part they have

played in European visits may be better understood from the following tables:—

A. LEMOUNG'S FAMILY.

LEMOUNG, chief of Kiau on Low's visit in 1851; guide to St. John and Low on their second ascent of the mountain in 1858; died 1877–1878.

BOLOUNG, his son, and chief of Kiau on Lemoung's death (according to Burbidge).

B. LEMAING'S FAMILY.

LEMAING, guide to Low in 1851; to St. John and Low, on their first ascent, 1858.

KUROU, his son; guide to Burbidge 1877–1878, chief of Kiau, presumably on death of Boloung.

SUMPOT, his son; guide to Haviland in 1892, and to other Europeans, including myself in 1913. He became chief of Kiau on the death of Kabong (see below, Kabong's family). He has no son, and on his death will probably be succeeded by a son of Kabong.

C. KABONG'S FAMILY.

SANGAT; no information about him.

GUMBAL, his son; no information about him.

KABONG, his son; chief of Kiau in Whitehead's time (1887–1888); succeeded Kurou.

UMPOH, his son, a young man now; has accompanied expeditions from 1910 onwards; is looked upon as next chief of Kiau.

There remain three men whom I did not trace: *Limbawan* and *Tambias*, guides to Little in 1887, and *Lamat*, described by Miss Gibbs as "the potential headman of Kiau."

As explained in the foregoing accounts of Kiau, this big village is built on the side of the hill, and in earlier days consisted of three separate villages—one at the top of this spur, another half-way down, and a third close to the banks

of the Kadamaian below. This is probably the origin of the three reigning families of Kiau. At present there are only two villages, as Upper Kiau has joined up with Middle Kiau.

Little states that "*Kabong* was the headman of the middle village together with *Baging*," and that "*Bunahow* owns the lower village." These last two names I did not hear mentioned.

III. THE LAKE OF KINABALU.

Old writers refer to a lake on or near Kinabalu, and each visitor to the mountain, having failed to find it, has had to offer some new suggestion to account for it.

Low* dismisses it summarily: "I made diligent inquiries of the Dyaks, but could learn nothing satisfactory about it. Very few had ever heard of such a lake."

St. John,† in a paper read before the Geographical Society in London, states: "That it exists to the east of the mountain appears from inquiry to be certain; its size it is unnecessary to estimate, though our informant stated that, standing on one bank, it was not possible to see the opposite one. . . . We jointly questioned the *Ida'an* on many questions during our long stay at Kiau village; they spoke of it as a certainty, many affirming that they themselves had been on trading expeditions to it."

Several travellers having tried hard to be the first to find this elusive lake, it became rather the thing to prove definitely its non-existence. Treacher,‡ in a discussion on Admiral Mayne's article on explorations in British North Borneo, states that "the late Mr. Wittt settled once for all the vexed question of the existence of the large mythical Kinabalu lake which had figured in all maps and charts of Borneo up to this time." He goes on to observe that "the late Mr. Frank Hatton supplemented Mr. Wittt's investigations in that quarter; but visiting it at a different time of year he found that its flooded condition from the waters of the *Linogu* or *Labuk* river gave some little foundation to the ancient tradition of the lake's existence." Treacher refers to a plain some thirty miles east of Kinabalu, which is known as *Danau*—a word of no particular meaning to the *Dusuns*, but in Malay meaning *lake*. This plain is 1600 ft. above sea-level, and measures roughly four miles

* Journ. Ind. Arch. and East. Asia, 1852, vol. vi. p. 17.

† Journ. Roy. Geogr. Soc. 1863, p. 221.

‡ Proc. Roy. Geogr. Soc. 1888, p. 145.

long by one mile in width ; it is surrounded by mountains which drain into this plain, flooding it at certain times of the year, so that this might well account for the mysterious lake which some knew of for certain, while others had looked for it all over the country in vain. Witt's long journeys in this district took place in 1881 and 1882. Between these two journeys W. B. Pryer took a long journey up the Kinabatangan, and Mrs. Pryer* relates how her husband "travelled within the limits of the lake, as marked on the map, for many miles. Inquiries from natives failed to elicit any information as to the existence of any large sheet of water anywhere in these parts, and W. therefore duly reported home the non-existence of the supposed Kina Balu lake." From Mrs. Pryer's book it would appear that her husband found this out in 1878, so that Treacher would then be wrong in crediting Witt as the first European to prove definitely the non-existence of the lake.

Personally I feel by no means convinced that the lake of Kinabalu is to be disposed of so easily. From my own inquiries among the natives of Kiau, I think that beyond doubt they have a legend to the effect that a lake did exist at one time on the mountain itself. It stands to reason that the passing traveller, usually with an imperfect knowledge of Malay, and almost always in entire ignorance of the Dusun language, cannot get such information out of a native at a moment's notice. To begin with, the younger generation of Dusuns on Kiau seemed to be remarkably ignorant or reticent about any local traditions or tribal legends; the older and more important men, on the other hand, were inclined to be more communicative, but unfortunately they knew very little Malay in comparison with the younger Dusuns, many of whom spoke this *lingua franca* of the country quite fluently. Although I lived with these people for six weeks, it was only towards the end of my stay on the mountain that I could get beneath the surface in my talks with some of them. From the moment of my arrival, however, they were always pleasant and easy to get on with, but questions about themselves, their customs, legends, &c., were nearly always received with suspicion, however delicately or circuitously I might lead up to them. Unlike up-river natives in Sarawak, these Dusuns seemed to be in deadly fear that what they said would one day be brought up in evidence against them. We must therefore look for trustworthy information from someone who will

* *A Decade in Borneo.* 1894, pp. 26, 27.

live among these people of Kiau, get to know them really well, gain their confidence, and, if possible, learn their language. From some such person we should be able to get a definite account of the Dusun idea of the lake of Kinabalu.

In the account of my expedition to the mountain in 1913* I have suggested another solution to the problem, which had the merit of finding approval (rather a non-committal approval, I confess!) with Sumpot, the chief of Kiau. I have suggested that in the Minitindok gorge lies the key to the mystery. "This gorge is about 200 ft. high and barely 50 ft. wide; the sides even now are gradually falling in. Now if this narrow gorge were filled up—and its appearance suggests that the Kadamaian has only broken through at no great distant date—a fine lake would be formed, enclosed by the two southern spurs of Kinabalu which divide above the Pakka camp."

A geologist should have no difficulty in finding evidence to support or refute my suggestion.

IV. MEANING OF THE NAME KINABALU.

The following derivations of the name Kinabalu have been suggested from time to time:—

- (i) That the word is *Kina Babu*, meaning *Chinese Widow*, owing to the white appearance of the mountain, and to the fact that a long time ago a large number of Chinese visited the mountain or lived near it. Another story is that the Chinese tried to obtain the treasure from the summit, but the dragon on guard killed so many that the mountain was called *Chinese Widow* on account of the number of Chinese ladies who lost their husbands on that occasion.
- (ii) That the word is a corruption of *Kina Bahru*, meaning *New China*, in allusion to a former Chinese colony in that region. As is well known, Chinese have difficulty in pronouncing the letter "r," so the corruption of *Kina Bahru* to *Kina Babu* is not unnatural.
- (iii) That the word is *Nabalu*, which in the Dusun language means *Resting-place of the Dead*. The Dusuns believe that after death their souls go to the top of this mountain, which they speak of by

* *Sarawak Gazette*, November 17th, 1913.

this name, accentuating the middle syllable.* This last explanation seems to me the most acceptable.

The subject has been discussed again quite recently in the correspondence columns of the *British North Borneo Herald*, where Mr. E. O. Rutter suggests that the word is really *Aki-na-balu*, meaning *The Solitary Father*, "aki" being the Dusun and Murut word for "grandfather"; "na," he states, is a prefix "which constantly occurs in the Dusun and Murut languages, sometimes denoting a past participle (= Malay 'ber'), sometimes interrogatory ('nakito ku,' do you see?), and in other cases apparently for the sake of euphony." He then states that "the word 'nabalu' in Dusun means widowed, without a partner ('balu' = widow or widower)." The solitary grandeur of the mountain is supposed to fit this ingenious name. The unfortunate part about this suggestion is that the Dusuns on the mountain do *not* refer to it as *Kinabalu*, but as *Nabalu* only. Perhaps we can find a *via media* between his translation of the word *Nabalu* ("without a partner") and mine ("the resting-place of the dead")? May it not mean "the place of separation," "the place set apart"? Perhaps some such translation would embrace both our suggestions.

V. AGENDA.

In conclusion, I should like to call the attention of future visitors to Kinabalu to the following points, which, as far as I know, are all untouched and require investigation:—

An exploration of the north side of the mountain; in particular, the great chasm which lies immediately below Low's Gully.

An exploration of the long row of peaks running off to the north of Low's Gully.

An exploration of the path on the mountain leading beyond the Marei Parei spur to the head of the Pangataram stream and on beyond. One should be able to descend from Kiau that way, but I believe no European has done it.

Is it possible to ascend the spur bordering the *right* bank of the Kadamaian?—the Kamborangah spur leads up to the *left* bank.

* St. John states that the mountain is "called *Kini* by the Dusuns and *Ida'an*." (*Life in the Forests of the Far East*. 1863. [2nd ed.] vol. i. p. 365, footnote.) St. John's excellent book, which is so accurate in most statements, nevertheless contains several blunders, and I conclude this must be one. Dusuns and *Ida'an*, by the way, are one and the same people.

Is it possible to make the ascent from the next valley to the south-east, which leads up to the summit plateau near the entrance to Low's Gully?

Natural history collections have been made on the western and southern sides only. Are there any striking novelties to be found on the other slopes?

There are several small caves or rock shelters in different parts of the mountain; in view of the great height of the mountain and its comparatively isolated fauna, a thorough search for bone remains would be of exceptional interest.

Collecting in a tropical country results in the discovery of a never-ending series of new species. Kinabalu, of course, is particularly attractive in this way, and an immense amount of work remains to be done before we can say the fauna and flora of the mountain is really known. Whitehead has done the birds and mammals, and I think the odds are rather against turning up anything new in those two classes; but that does not apply to the Vegetable Kingdom, or to any other branch of the Animal Kingdom.